

1     Claims

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3             1.       A hard tonneau cover for the cargo box of a pick-up truck comprising:

4                     a framework configured to be fit to said cargo box;

5                     a mounting system attaching said framework to said cargo box;

6                     a panel overlying said framework to cover the same; said panel extending over a

7 series of perimeter rails included in said framework;

8                     a series of trim strips attached to and overlying said perimeter rails, said trim

9 strips extending over a perimeter of said panel to retain the same on said framework perimeter

10 rails.

11

12             2.       The assembly according to claim 1 wherein said perimeter rails comprise

13 aluminum extrusions.

14

15             3.       The assembly according to claim 1 wherein each of said perimeter rails

16 includes a slot mating with a lengthwise feature on said trim strips.

17

18             4.       The assembly according to claim 1 wherein said perimeter rails are each

19 formed with a ledge surface on which an associated panel edge rests with an endwise clearance

20 freely allowing thermal expansion of said panel.

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22             5.       The assembly according to claim 4 wherein said trim strips press against

1 an upper surface of said one or more panels to retain the same in position against said perimeter  
2 rail surfaces.

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4 6. The assembly according to claim 1 wherein said one or more panels are  
5 comprised of corrugated plastic having additional strengthening layers bonded to each opposite  
6 face.

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8 7. The assembly according to claim 6 wherein a color integrated film is  
9 disposed over an outer exposed side of said panel.

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11 8. The assembly according to claim 7 wherein said film layer loosely lies  
12 atop said exposed side of said panel.

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14 9. The assembly according to claim 1 wherein said mounting system includes  
15 a plurality of hinge and striker-latch assemblies each including components thereof mounted to  
16 said cargo box by a bracket clamped to a side wall lip of said cargo box and also including  
17 mating components mounted to said cover framework.

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19 10. The assembly according to claim 9 wherein said framework is supported  
20 spaced above said cargo box walls and holds a peripheral seal extending down from said  
21 framework perimeter rails engaged with a top surface of said cargo box walls.

1                   11.     The assembly according to claim 10 wherein said peripheral seal is shaped  
2 with a vertical series of hollow pleats providing easy compressibility.

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4                   12.     The assembly according to claim 11 wherein a bottom end of said  
5 peripheral seal is formed with spaced apart contact surfaces to minimize trapping of dirt.

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7                   13.     The assembly according to claim 10 wherein a bottom slot is formed along  
8 said perimeter rails and said seal includes an enlarged upper end slid into said slot to be retained  
9 therein.

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11                  14.     The assembly according to claim 1 wherein said framework includes at  
12 least one crossing rail attached at either end to a respective perimeter rail.

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14                  15.     The assembly according to claim 14 wherein said perimeter rails includes  
15 one or more tee slots, and wherein crossing rail also includes one or more tee slots, and  
16 connection pieces interconnect said crossing rail to said perimeter rails utilizing components  
17 received in a tee slot of said crossing and perimeter rails.

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19                  16.     The assembly according to claim 15 wherein said connection hardware  
20 includes a connector plate having a tee feature receive in a tee slot of one of said perimeter or  
21 crossing rail and bolts having heads captured in a tee slot of another of said crossing or perimeter  
22 rail.

1                   17.     The assembly according to claim 16 further including strut rails extending  
2 from a crossing rail to a perimeter rail and connected at either end thereto.

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4                   18.     The assembly according to claim 19 wherein said perimeter rails are each  
5 formed with lengthwise drainage channels receiving water on said one or more panels leaking  
6 past said trim strips, said channels leading to a corner of said framework, a corner piece  
7 connecting each adjacent end of two meeting perimeter rails, said corner piece receiving water  
8 from said channels and directing water out beyond said peripheral seal.

9  
10                  19.     The assembly according to claim 1 wherein each perimeter rail includes a  
11 ledge surface on which a panel perimeter rests and further including an outer surface downwardly  
12 curved, said trim strips conforming to said outer curved rail surface.

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14                  20.     The assembly according to claim 19 wherein said perimeter rails outer  
15 surface has one or more lengthwise slots therein receiving a protruding lengthwise extending  
16 portion of a trim strip to be mounted thereto.

17  
18                  21.     The assembly according to claim 20 wherein two overlapped trim strips  
19 extend along each perimeter rail, each slidably received in a respective groove in an associated  
20 perimeter rail.

21  
22                  22.     The assembly according to claim 1 wherein said cover includes a plurality

1 of separate sections including a rear section and a center section, said rear section hinged to said  
2 center section, said center section fixed to said cargo box by said mounting system.

3  
4 23. The assembly according to claim 22 wherein said framework includes a  
5 rear framework section comprised of a rear perimeter rail extending over a rear tailgate of said  
6 cargo box and two side perimeter rails each connected at one end to a respective end of said rear  
7 perimeter rail, each side perimeter rail extending partially along opposite side walls of said cargo  
8 box, and a crossing rail connected at opposite ends to an end of each side perimeter rail opposite  
9 said end connected to said rear perimeter end to form a rectangular framework section, a rear  
10 section panel overlying said rear framework section.

11  
12 24. The assembly according to claim 23 wherein said center section comprises  
13 a center crossing rail fixed at either end to said cargo box by a pair of clamping brackets each end  
14 clamped to a respective side wall of said cargo box, and a center panel overlying said center  
15 crossing rail.

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17 25. The assembly according to claim 24 wherein said crossing rail of said rear  
18 framework section comprises an extruded shape formed with a series of lengthwise slots and  
19 mounting a pair of hinge components by elements received in one or more of said slots.

20  
21 26. The assembly according to claim 22 further including a forward section  
22 including a forward framework section comprised of a forward perimeter rail overlying a forward

1 wall of said cargo box and a pair of side perimeter rails overlying a portion of said cargo box side  
2 walls each connected at one end to a respective end of said forward perimeter rail, and a rear  
3 crossing rail connected at opposite ends to an end of a respective side perimeter rail opposite an  
4 end connected to said forward perimeter rail, and a forward section panel mounted over said  
5 forward section framework.

6  
7 27. The assembly according to claim 26 wherein said forward section is  
8 supported above said cargo box by a pair of latch-striker assemblies on one side thereof and a  
9 pair of hinges on the other side thereof, included in said mounting system.

10  
11 28. The assembly according to claim 26 wherein said rear and forward  
12 sections spaced from said center section and a gutter trim piece interposed therebetween each  
13 extending to each cargo box side wall to carry water over said cargo box side walls.

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15 29. The assembly according to claim 9 wherein each of said striker latch  
16 assemblies includes a striker components including a bracket clamped to a cargo box side wall, a  
17 pin held in spaced bracket ears, and a tube revolvable on said pin.

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19 30. The assembly according to claim 29 wherein said pin is a quick removal  
20 pin able to be readily removed from said bracket.

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22 31. The assembly according to claim 29 further including a pair of guide

1 washers on said pin and tube and a series of spacer washers on each end of said pin and tube  
2 locating said guide washers axially thereon.

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4 32. The assembly according to claim 9 wherein said mounting system brackets  
5 comprises an outer angle piece having a horizontal leg overlying the top of said cargo box side  
6 wall and a vertical leg extending outside an inner lip of said cargo box side wall, and an inner  
7 angle piece secured thereto with a horizontal leg extending beneath said cargo box side wall top  
8 and a vertical leg extending inside of said cargo side wall inner lip, said vertical legs drawn  
9 together by threaded fasteners to be clamped to said lip.

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11 33. The assembly according to claim 32 further including a series of spacers  
12 interposed between said vertical legs of said inner and outer angle pieces.

13  
14 34. A hard tonneau cover for the cargo box of a pick-up truck comprising:  
15 a framework configured to be fit to said cargo box;  
16 a mounting system attaching said framework to said cargo box;  
17 a panel overlying said framework to cover the same; said panel extending over a  
18 series of perimeter rails included in said framework;  
19 said panel nonfixedly held on said framework with an edge clearance freely  
20 allowing thermal expansion and contraction.

1                   35.     The assembly according to claim 1 wherein said perimeter rails have one  
2 or more trim trips secured to an outer surface to cover said rails and extend over a perimeter of  
3 said panel to nonfixedly hold said panel on said framework.  
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5                   36.     The assembly according to claim 1 wherein each of said perimeter rails  
6 includes a slot slidably mating with a lengthwise feature on said strips so as to retain the same  
7 thereon.  
8

9                   37.     The assembly according to claim 35 wherein said perimeter rails are each  
10 formed with a ledge surface on which an associated panel perimeter rests with an endwise  
11 clearance freely allowing said thermal expansion of said panel.  
12

13                  38.     A hard tonneau cover for the cargo box of a pick-up truck comprising:  
14                   a framework configured to be fit to said cargo box;  
15                   a mounting system attaching said framework to said cargo box;  
16                   a panel overlying said framework to cover the same; said panel extending over a  
17 series of perimeter rails included in said framework;  
18                   each of said perimeter rails including a ledge surface on which said panel rests, a  
19 drainage channel lying beyond said ledge surface, and said panel extending past said ledge to said  
20 drainage channel.  
21

22                  39.     The assembly according to claim 38 wherein said perimeter rails meet at



1 corners and are connected by corner pieces, said corner pieces including surfaces located below  
2 said rail channels to receive water from said perimeter rail drainage channels and direct the same  
3 outwardly from said channels.  
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5 40. The assembly according to claim 38 wherein said perimeter rails are each  
6 formed with a ledge surface on which an associated panel edge rests with an endwise clearance  
7 freely allowing thermal expansion of said panel.  
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9 41. A hard tonneau cover for the cargo box of a pick-up truck comprising:  
10 a framework configured to be fit to said cargo box;  
11 a mounting system attaching said framework to said cargo box;  
12 a panel overlying said framework to cover the same said panel extending over a  
13 series of perimeter rails included in said framework; and  
14 at least one crossing rail extending across said cargo box and connected at either  
15 end to a perimeter rail; said crossing rail extruded to be bowed up to create a crown in said panel.  
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17 42. The assembly according to claim 41 wherein said perimeter rails include a  
18 ledge surface on which said panel perimeter rests, said surfaces tilted to be aligned with an end of  
19 said bowed crossing rail.  
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